

ABSTRACT

Decades of cognitive psychological research have taught us that there are limitations to human perception, attention, and decision-making. We cannot process every piece of stimuli that surrounds us on a daily basis, so instead we have adapted for efficiency by attuning to patterns and developing heuristics to help us navigate a complex world. While this tendency to rely on mental shortcuts often serves us well, it also has the potential to inadvertently undermine criminal investigations and lead to wrongful convictions. We are conducting a systematic literature review of research on cognitive biases in the criminal justice system and are organizing the existing works by the point in the process that they address - from evidence collection through sentencing and post-conviction. Guided by this scholarship and in consultation with academic experts and practitioners in the field, we are creating a diagram depicting the various points in which cognitive phenomena, particularly confirmation bias and tunnel vision, can influence a criminal investigation and prosecution. We will illustrate this theoretical map with examples from exoneration cases, and situate these examples in a broader cultural context. This work can facilitate conversation with researchers, policy-makers, advocates, and other criminal justice professionals seeking truth and fairness in our system.

COGNITIVE BIAS

An umbrella term that refers to a variety of inadvertent mental tendencies (such as confirmation bias, contextual bias, anchoring, hindsight bias, availability heuristic, implicit [racial] bias¹ and more) which can affect perception, memory, reasoning, and behavior.



The human brain is evolutionarily designed to attune to patterns in our complex world, allowing us to be efficient and make rapid decisions with little cognitive effort. Although these mental shortcuts may generally serve us well, they can also undermine the fair administration of justice.

CONFIRMATION BIAS

The selective seeking, recalling, weighting, and/or interpreting of information in ways that support existing beliefs, expectations, or a hypothesis in hand (Findley, 2012; Nickerson, 1998).

¹ While there is a substantial and growing body of literature addressing the insidious issue of implicit racial bias in the context of the criminal justice system (see the work of Drs. Joshua Correll, Jennifer Eberhardt, Phillip Atiba Goff, Anthony Greenwald, and colleagues, for examples), for the purposes of this project, we primarily focused more narrowly on confirmation bias and tunnel vision in criminal investigations and prosecutions.

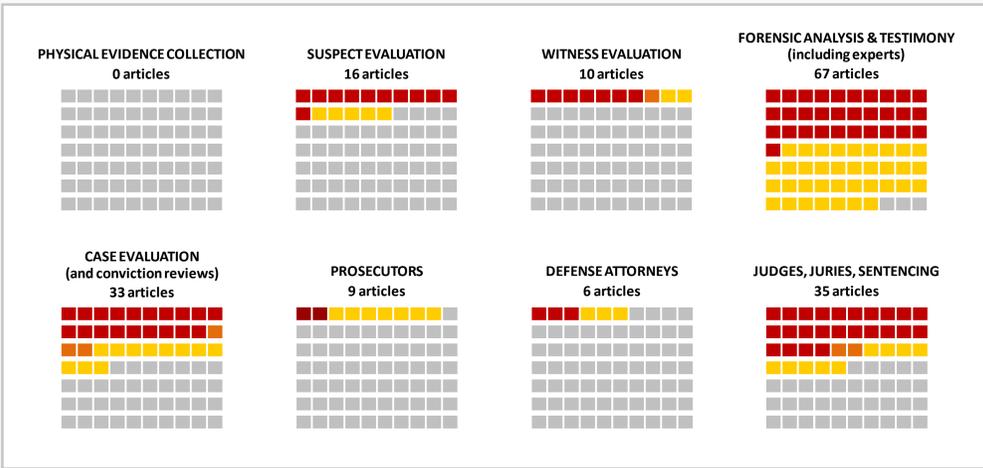
METHODS

- Systematic review (scientific principles applied to literature review), scoping review (useful for overview of a broad field)
- Databases searched: PsycINFO, Social Sciences Full Text
- Search terms used: (criminal OR justice OR police OR investigation* OR forensic* OR jury OR juries OR judge* OR conviction* OR prosecut* OR defense OR defender* OR attorn*) in any field (e.g., text, title) AND (“cognitive bias” OR “implicit bias” OR “cognitive dissonance” OR “tunnel vision” OR “confirmation bias” OR “interpretive bias” OR “belief perseverance” OR “asymmetrical skepticism”) in any field (e.g., text, title)
- Inclusion criteria:
 - Primary sources (original data)
 - Secondary sources (reviews, letters, commentaries) – used for background, references
 - Published or unpublished
- Exclusion criteria:
 - No full text available
 - Implicit bias in policing
- Manual review of reference lists in identified studies
- Organized by point in criminal investigation and prosecution process (see below)

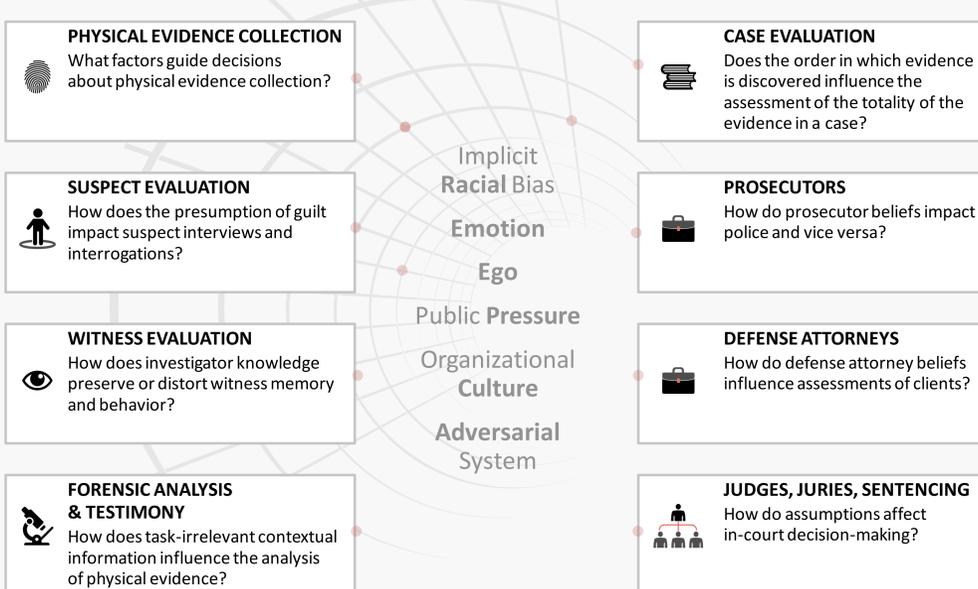
RESEARCH AND GAPS

Number of scholarly articles found in each category/point in criminal investigation and prosecution process

Type of paper	Total
Primary data	97
Intervention studies	6
Secondary data (e.g., reviews, letters, commentaries)	73



WHERE COGNITIVE BIAS & TUNNEL VISION MAY OCCUR



POTENTIAL SOLUTIONS

Researchers and practitioners have proposed and tested some potential solutions, but more intervention studies are needed to fully assess the efficacy of these recommendations.

- BLIND WITNESS INTERVIEWS** (Rivard, 2014)
- LINEAR SEQUENTIAL UNMASKING IN FORENSIC ANALYSIS** (Dror et al., 2015; Krane et al., 2008)
- DESIGNATE “CONTRARIANS” OR “DEVIL’S ADVOCATES”** (MacFarlane, 2008; Salet & Terpstra, 2014)
- GATHER FACTS RATHER THAN BUILD A CASE** (Wallace, 2015)
- ACTIVELY CONSIDER COUNTER-ARGUMENTS, EVIDENCE THAT POINTS AWAY FROM SUSPECT/HYPOTHESIS** (O’Brien, 2009)
- CONDUCT CRITICAL REVIEWS OF CLOSED OR UNSOLVED CASES** (Jones et al., 2008; Rossmo, 2016)
- SIMPLIFY JURY INSTRUCTIONS** (Halverson et al., 1997)

CASE EXAMPLES

Levon Brooks and Kennedy Brewer finally exonerated in 2008

Levon Brooks and Kennedy Brewer were both wrongfully convicted of strikingly similar crimes committed in the same small town of Brooksville, MS (pop. < 2,000) in the early 1990s.

CASE #1 – 1990
3-year-old victim abducted from home at night
Victim raped & murdered
Victim’s body found in a pond

CASE #2 – 1992
3-year-old victim abducted from home at night
Victim raped & murdered
Victim’s body found in a creek

These remarkable similarities might have prompted investigators to consider the possibility that these horrific crimes were committed by the same person. In fact, the real perpetrator (Justin Albert Johnson) was briefly considered a suspect in both original investigations. However, police ultimately pursued the typical suspects instead.

CASE #1
Victim’s mother’s ex-boyfriend (Levon Brooks) convicted and sentenced to life in prison



CASE #2
Victim’s mother’s boyfriend (Kennedy Brewer) convicted and sentenced to death



Post-conviction DNA testing eventually identified the true perpetrator who confessed to both murders and these innocent men were exonerated.

George Perrot officially exonerated last month (October 2017)

Eric Kelley and Ralph Lee released last week (November 2017)

PRELIMINARY CONCLUSIONS

- Most studies demonstrate the phenomenon; few implement and measure interventions aimed at mitigating cognitive biases
- Forensic science is the leading category for number of primary source studies (n=31)
 - Few studies within each specific forensic science discipline, however
 - Most studies used experienced practitioners
 - Most studies published in past 10 years
- In some categories, more commentaries than studies with original data
- Research on the role of cognitive bias among prosecutors and defenders is particularly sparse
- Systematic reviews (and even scoping reviews) can contribute to understanding of criminal justice research

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